

Title (en)
SOLENOID VALVE

Title (de)
MAGNETVENTIL

Title (fr)
SOUPAPE À SOLÉNOÏDE

Publication
EP 3382245 A1 20181003 (EN)

Application
EP 18162970 A 20180320

Priority
JP 2017061560 A 20170327

Abstract (en)
A solenoid valve (1) configured such that a plunger (60) is attracted upon energization of a hollow cylindrical solenoid part (20) to move a valve element (75) includes a flare pipe (50) having a sliding inner surface (51a) on which the plunger (60) slides. The flare pipe (50) includes a large-diameter portion (53) having a larger diameter than the sliding inner surface. Inside the large-diameter portion (53), a compression spring (59) is accommodated to urge the plunger (60) in a direction toward a valve seat (73).

IPC 8 full level
F16K 27/02 (2006.01); **F16K 31/06** (2006.01)

CPC (source: CN EP KR)
F16K 1/36 (2013.01 - KR); **F16K 27/029** (2013.01 - EP KR); **F16K 31/0655** (2013.01 - CN EP KR); **F16K 31/0675** (2013.01 - CN EP); **H01F 7/121** (2013.01 - KR); **H01F 7/1607** (2013.01 - KR)

Citation (applicant)

- JP 2955511 B2 19991004
- JP H09196205 A 19970729 - SMC CORP

Citation (search report)

- [X] US 2013099146 A1 20130425 - FUKANO YOSHIHIRO [JP], et al
- [XY] US 2012292544 A1 20121122 - MITA MINEHIKO [JP], et al
- [Y] CN 102506217 A 20120620 - UNIV SHENYANG CHEMICAL TECH, et al
- [X] EP 1895218 A1 20080305 - MAGNETI MARELLI POWERTRAIN SPA [IT]
- [X] US 2005092951 A1 20050505 - GROETZINGER THOMAS [DE]
- [A] US 5535783 A 19960716 - ASOU YOSHIO [JP], et al

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US2022268369A1; US11698142B2; EP4299956A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 3382245 A1 20181003; **EP 3382245 B1 20200513**; CN 108662250 A 20181016; CN 108662250 B 20200207; JP 2018162868 A 20181018; JP 6533804 B2 20190619; KR 102052260 B1 20191204; KR 20180109712 A 20181008; TW 201835478 A 20181001; TW I696780 B 20200621

DOCDB simple family (application)
EP 18162970 A 20180320; CN 201810246392 A 20180323; JP 2017061560 A 20170327; KR 20180033106 A 20180322; TW 107107439 A 20180306